

**REMARKS**

**I. Status of the Claims**

Claims 1, 3, 4, 8, 18, 26, 27, 29, 35, 72, 73, 75, 78, 79, 81-83, and 87-89 are now pending in this application. Claims 2, 9-17, 19-25, 33-34, 36-71, 74, and 90-121 were cancelled previously, without prejudice or disclaimer. Claim 1 is amended herein to incorporate the elements of claim 72, which is thus cancelled without prejudice or disclaimer. Claim 5-7, 28, 30-32, 76, 77, 80, and 84-86 are also cancelled herein, without prejudice or disclaimer. Accordingly, no new matter has been presented.

**II. Rejections Under 35 U.S.C. § 103(a)**

The Examiner maintains all of the rejections previously presented for the reasons of record. Specifically, the Examiner maintains the rejection of claims 1, 3-8, 18, 26-32, 35, 72-73, and 75-89 under 35 U.S.C. § 103(a) as allegedly unpatentable over U.S. Patent No. 6,410,005 to Galleguillos et al., or U.S. Patent No. 6,663,855 to Frechet et al. ("Frechet '855"), or U.S. Patent No. 6,685,925 to Frechet et al., or U.S. Patent No. 6,197,883 to Schimmel et al., or U.S. Patent No. 6,153,206 to Anton et al. ("Anton"), in view of U.S. Patent No. 5,994,446 to Graulus et al., U.S. Patent No. 6,518,364 to Charmot et al., or U.S. patent No. 6,410,666 to Grubbs et al.. See Mar. 26, 2008, Final Office Action at 2-11.

Applicants respectfully traverse for at least the reasons of record and the additional reasons presented below.

**A. The Claimed Invention Has Unexpected Properties as Compared with the Prior Art References**

In their prior response, Applicants submitted the Declaration of Bertrand LION Under 37 C.F.R. § 1.132 (“First Declaration”), which demonstrated that a polymer according to the claimed invention (50% to 90% of at least one first block having a  $T_g \geq 40^\circ\text{C}$  and 5% to 45% of at least one second block having a  $T_g \leq 20^\circ\text{C}$ ) has unexpected improved results, in terms of oil resistance, as compared with a comparative polymer of the prior art. See First Declaration at ¶¶ 12-13.

The Examiner, however, dismisses the First Declaration for two reasons. See Mar. 26, 2008, Final Office Action at 14-15. First, the Examiner argues that the comparative results are not commensurate in scope with the claims “because only a single weight percent and composition data point . . . has been compared as the instant block copolymer, whereas the claims are much broader with respect to what the block copolymer can be.” *Id.* at 14. Second, the Examiner argues that “the property of enhanced oil resistance associated with a large amount of high  $T_g$  block is not unexpected by nature of its higher  $T_g$  and greater hydrophilicity, and thus, is expected to exhibit higher oil/heat resistance and weatherability.” *Id.* at 15.

Addressing the Examiner’s first point, while Applicants do not agree with the Examiner that the First Declaration is not commensurate in scope with the claims as they stood in the prior response, in an effort to advance prosecution, Applicants have amended claim 1 to incorporate the elements of claim 72. Specifically, claim 1 as-amended recites that each of the at least one first and second blocks comprises at least one monomer chosen from acrylic acid, acrylic acid esters, methacrylic acid, and methacrylic acid esters.

The First Declaration compared a polymer according to the claimed invention containing 70% of a first block polymer (mixture of 50% isobornyl acrylate and 50% isobornyl methacrylate) with a T<sub>g</sub> of 102°C and 30% of a second block polymer (isobutyl acrylate) with a T<sub>g</sub> of -24°C, with a comparative polymer. See First Declaration at ¶¶ 6-7. Because the scope of the claims has been limited to monomers chosen from acrylic acid, acrylic acid esters, methacrylic acid, and methacrylic acid esters, which are the types of monomers used for the first and second block polymers in the First Declaration (*see, e.g.*, Specification as-published (U.S. Patent Application Publication No. 2004/0120920 A1) at ¶ [0079]), Applicants respectfully submit that the First Declaration is now even more commensurate in scope with the claims, as-amended.

Regarding the Examiner's second point, contrary to the Examiner's position, Applicants respectfully submit that there is no relationship between the T<sub>g</sub> and the hydrophilicity of the polymer. Rather, the hydrophilicity is linked with the chemical structure of the monomers.

Applicants acknowledge that the T<sub>g</sub> of the polymer is linked with the stickiness of the deposit when it is **initially** placed on the skin, lips, etc. (i.e., at T=0 minutes). A polymer with a high T<sub>g</sub> will be non-sticky when placed on the skin, lips, etc., whereas a polymer with a low T<sub>g</sub> (e.g., ≤ 0°C) will be stickier.

The aim of the present invention, however, is to be non-sticky both when the deposit is initially placed on the skin, lips, etc., **and** also when the deposit comes in contact with oil/sebum (i.e., an oil resistant deposit). The oil resistance is linked with the chemical structure of the polymer (i.e., with its hydrophilicity or its hydrophobicity),

rather than its Tg. To have this particular property, Applicants chose to use (meth)acrylate acid/ester monomers.

Applicants, therefore, discovered that deposits containing polymers with a high Tg are non-sticky when **initially** deposited on the skin, lips, etc., **and** that deposits containing polymers with a specific chemical structure (e.g., (meth)acrylate acid/ester monomers) have the necessary oil resistance **after** it is deposited on the skin, lips, etc. Thus, contrary to the Examiner's position, it would not have been expected that polymers with a high Tg **and** a particular chemical structure would exhibit improved oil resistance both initially when the deposit is applied **and** afterwards.

Accordingly, Applicants respectfully submit that the Examiner cannot conclude that the Declaration is not commensurate in scope with the claims, as-amended, and that the Declaration does not demonstrate unexpected results for the claimed invention.

**B. Frechet '855 and Anton Expressly Teach Away from the Claimed Invention<sup>1</sup>**

**Frechet '855**

Despite acknowledging that Frechet '855 prefers a "molar ratio of the core polymer [low Tg] to the flanking polymers [high Tg] is from 3:1 to 10:1" (Frechet '855, col. 5, lines 12-15), the Examiner argues that the claimed ratio of the high Tg first block polymer to the low Tg second block polymer "are still well within prior art 1:10 to 10:1 range of molar ratios for core and flanking polymers . . . ." Mar. 26, 2008, Final Office Action at 11-12 (citing Frechet '855, col. 5, lines 12-13). The Examiner reasons that

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<sup>1</sup> Applicants continue to believe that all of the references relied upon by the Examiner would not have motivated one skilled in the art to use the claimed ratio of first and second block polymers with high and low Tg, respectively, as the improved results would not have been expected.

“any molar ratio used with the range disclosed in prior art is expected to be successful in the production of the block copolymer.” *Id.* at 12.

Applicants acknowledge that Frechet '855 discloses 1:10 and 10:1 range of molar ratios for core and flanking polymers, but emphasize that Frechet '855 expressly states that it is **preferred** to use a ratio of high and low Tg polymers that fall outside the scope of the claims. Therefore, one skilled in the art, considering Frechet '855 as a **whole**, would not have been motivated to use more of the higher Tg repeat unit and less of the lower Tg repeat unit, as required by the claims. *See KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1740-41, 82 U.S.P.Q.2d 1385, 1396 (2007) (recognizing that a showing of “teaching, suggestion, or motivation” could provide helpful insight in determining whether the claimed subject matter is obvious under § 103(a)).

Accordingly, Applicants respectfully submit that the rejection is in error and should be withdrawn.

### **Anton**

The Examiner acknowledges that Anton prefers an almost equal amount of the first and second repeating units, but again points to the section in Anton, which teaches that the weight ratio of two repeat units can vary from 2-99 wt% of the first repeat unit to 1-98 wt% of the second repeat unit, and vice versa. *See* Mar. 26, 2008, Final Office Action at 12 (citing Anton, col. 5, lines 3-19). The Examiner thus concludes that “any relative proportions of the first and second repeating units employed within the range disclosed is expected to be suitable and operational.” *Id.*

The Examiner, however, fails to recognize that Anton also states that the polymer contains “more preferably” 40-60 wt% of the first repeat unit having a lower Tg and 40-

60 wt% of the second repeat unit having a higher Tg. See Anton, col. 5, lines 19-23.

Thus, Anton would not have motivated one skilled in the art to use more of the higher Tg repeat unit and less of the lower Tg repeat unit, as required by the claims. See *KSR*, 127 S. Ct. at 1740-41, 82 U.S.P.Q.2d at 1396.

For at least this reason, Applicants respectfully submit that the rejection based on Anton is incorrect and should be withdrawn.

**C. Claimed Intermediate Block and Polydispersity Index Not Inherent in Polymers Disclosed in Prior Art of Record**

The Examiner concedes that “[s]ome references . . . are silent regarding the polydispersity index expressed in the present claims,” but the Examiner argues “that it would have been obvious . . . to control the optimum . . . polydispersity, polymer composition and architecture of the resultant block copolymer product by varying experimental parameters . . . .” Mar. 26, 2008, Final Office Action at 10-11. Therefore, the Examiner’s arguments appear to be based on the unsupported premise that the cited references inherently teach and/or provide motivation for the claimed intermediate block polymer and polydispersity index.

The Examiner appears to assume that if a block polymer contains the same building block polymers then the resultant block polymers will inherently have the same block architecture, including the formation of an intermediate block as claimed, and will have the same physical characteristics, including the polydispersity index as claimed. The Examiner, however, is ignoring the significance that the synthesis of the block polymer has on the structure of the block polymer, and, specifically, the presence of an intermediate block as claimed, and, moreover, its effect on the physical characteristics, such as the polydispersity index, of the resultant block polymer.

For example, Applicants respectfully submit herewith the Declaration of Bertrand LION Under 37 C.F.R. § 1.132 (“Second Declaration”), which demonstrates that a comparative block polymer lacks the claimed intermediate block and polydispersity index even though it comprises components in amounts and having Tg values covered by the instant claims. See Second Declaration at ¶¶ 6, 11, and 12 and Table I. Specifically, Applicants compared the polydispersity of a comparative block polymer, which included a purification step in the synthesis of the first block, with an inventive block polymer (i.e., Example 9 of the instant application), which did not employ such a purification step. See *id.* at ¶¶ 8a and 10.

The Second Declaration demonstrates that the purification step used in the synthesis of the comparative block polymer results in a “real” block polymer lacking an intermediate block as claimed, whereas the inventive block polymer, which omits any purification step, has the claimed intermediate block. See *id.* at ¶ 14. Furthermore, the comparative polymer, which lacks an intermediate segment, has a low polydispersity index outside the scope of the claims. See *id.* at 15. Accordingly, the prior art of record, which the Examiner asserts disclose block polymers containing components falling within the scope of the claims in terms of the amount present and the Tg values of the block, may still not necessarily have the claimed intermediate block or the polydispersity index.

Because the synthesis of the block polymer can have a significant effect on the structure (i.e., with or without an intermediate block as claimed) and physical characteristics (i.e., polydispersity index) of the resultant block polymer, there are not a finite number of predictable results, which the Examiner appears to erroneously base

the obviousness rejection upon. See *KSR*, 127 S. Ct. at 1740-41, 82 U.S.P.Q.2d at 1396 (holding that the operative question for obviousness is “whether the improvement is more than the predictable use of prior art elements according to their established functions”). Because the structure and physical characteristics of block polymers is unpredictable, obviousness has not been established.

Moreover, at a minimum, in the case of those references that are silent as to the polydispersity index of the resultant block polymers, Applicants respectfully submit that because these references do not recognize polydispersity index as a result-effective parameter, one skilled in the art would not have been motivated to modify the various synthetic parameters in order to arrive at the claimed polydispersity index. Indeed, M.P.E.P. § 2144.05(II)(B) requires that “[a] particular parameter must first be recognized as a result-effective variable . . . before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation.” (Citing *In re Antonie*, 559 F.2d 618, 195 U.S.P.Q. 6 (C.C.P.A. 1977) (emphasis added)).

For at least these additional reasons, Applicants respectfully submit that the Examiner’s rejection is in error and should be withdrawn.

### **Conclusion**

In view of the foregoing amendments and remarks, Applicants submit that this claimed invention, as amended, is neither anticipated nor rendered obvious in view of the prior art references cited against this application. Applicants, therefore, request the Examiner’s reconsideration of the application and the timely allowance of the pending claims.



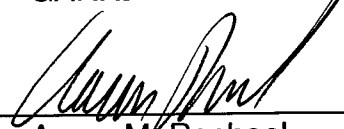
If the Examiner believes a telephone conference could be useful in resolving any of the outstanding issues, she is respectfully urged to contact Applicants' undersigned counsel at 202-408-4152.

If there is any fee due in connection with the filing of this Statement, please charge the fee to our Deposit Account No. 06-0916.

Respectfully submitted,

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Dated: September 25, 2008

By:   
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**ATTACHMENT:** Declaration of Bertrand LION Under 37 C.F.R. § 1.132